Laura Classen Curriculum Vitae

Condensed Matter Physics and Material Science Department
Brookhaven National Laboratory
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Date of Birth: Sept. 11, 1988
Nationality: German
Sex: female
Marital Status: single

Research Experience

Jan. 2017 – present	Research Associate	Brookhaven National Laboratory
	Condensed Matter Physics Department with Alexei Tsvelik	
Nov. 2016 – Jan. 2017	Research Associate	Heidelberg University
	Institute for Theoretical Physics with Michael Scherer	
Mar. 2016 – Apr. 2016	Research visit	University of Minnesota
	School of Physics and Astronomy with Andrey Chubukov	

Education

Oct. 2013 – Nov. 2016 Ph.D. in Theoretical Physics, Magna Cum Laude 1.0 (very good)
Ph.D. thesis: *Competing Orders in Strongly Correlated Systems - Dirac Materials and Iron-Based Superconductors*
Institute for Theoretical Physics, Heidelberg University
Advisor: Michael Scherer

Oct. 2011 – Oct. 2013 Master of Science, 1.0 mit Auszeichung (very good with distinction)
Master thesis: *Interplay between electron-phonon and Coulomb interactions in graphene*
Institute for Theoretical Solid State Physics, RWTH Aachen University
Advisor: Carsten Honerkamp

Oct. 2008 – Oct. 2011 Bachelor of Science, 1.4 (very good)
Bachelor thesis: *Interaction-induced pumped charge - Resonance Shapes for Spectroscopy*
Institute for the Theory of Statistical Physics, RWTH Aachen University
Advisor: Maarten Wegewijs

Awards and Scholarships

Apr. 2014 – Oct. 2016	German National Academic Foundation: Doctoral Fellowship
Oct. 2014 – Oct. 2016	Heidelberg Graduate School of Fundamental Physics: Doctoral Fellowship
2013	RWTH Aachen University: Dean's List for outstanding Master's Degree
2011	RWTH Aachen University: Dean's List for outstanding Bachelor's Degree

Publications

1 *Interplay between magnetism, superconductivity, and orbital order in a 5-pocket model for iron-based superconductors - a parquet renormalization group study*
L. Classen, R-Q. Xing, M. Khodas, A.V. Chubukov, Phys. Rev. Lett. **118**, 037001 (2017)

2 *Competing instabilities, orbital ordering and splitting of band degeneracies from a parquet renormalization group analysis of a 4-pocket model for iron-based superconductors: application to FeSe*
R-Q. Xing, L. Classen, M. Khodas, A.V. Chubukov, Phys. Rev. B **95**, 085108 (2017)

3 *Competition of density waves and quantum multicritical behavior in Dirac materials from functional renormalization*
L. Classen, I. F. Herbut, L. Janssen, M. M. Scherer, Phys. Rev. B **93**, 125119 (2016)

4 *Mott multicriticality of Dirac electrons in graphene*
L. Classen, I. F. Herbut, L. Janssen, M. M. Scherer, Phys. Rev. B **92**, 035429 (2015)

5 *Ground state phase diagram of the half-filled bilayer Hubbard model*
M. Golor, T. Reckling, L. Classen, M. M. Scherer, S. Wessel, Phys. Rev. B **90**, 195131 (2014)

6 *Instabilities on graphene's honeycomb lattice with electron-phonon interactions*
L. Classen, M. M. Scherer, C. Honerkamp, Phys. Rev. B **90**, 035122 (2014)

7 *Heat, molecular vibrations, and adiabatic driving in non-equilibrium transport through interacting quantum dots*
F. Haupt, M. Leijnse, H. L. Calvo, L. Classen, J. Splettstoesser, M. R. Wegewijs, Phys. Stat. Solidi B **250**, 2315 (2013)

8 *Interaction-induced charge and spin pumping through a quantum dot at finite bias*
H. L. Calvo, L. Classen, J. Splettstoesser, M. R. Wegewijs, Phys. Rev. B **86**, 245308 (2012)

Talks

Dec. 2016 *Interplay between magnetism, superconductivity, and orbital order in 5-pocket iron-based superconductors*
Advanced Seminar on Condensed Matter Physics, Heidelberg (Germany)

Oct. 2016 *Competition of density waves and quantum multicritical behavior in Dirac materials from functional renormalization*
Workshop on Quantum Many-Body Methods in Condensed Matter Systems, Aaachen (Germany)

Sept. 2016 *Interplay between magnetism, superconductivity, and orbital order in 5-pocket iron-based superconductors*
Conference on the Exact Renormalization Group, Trieste (Italy)

July 2016 *Interplay between magnetism, superconductivity, and orbital order in 5-pocket model for iron-based superconductors*
Condensed Matter Theory Seminar, Cologne (Germany)

Apr. 2016 *The functional RG and its application to critical behavior*
Condensed Matter Theory Journal Club, Minneapolis (USA)

Sept. 2015 *Multicritical point and competing orders of graphene's Dirac electrons*
Seminar – Quantum and Gravitational Fields, Jena (Germany)

Mar. 2015 *Multicritical point and competing orders of graphene's Dirac electrons*
53. Internationale Universitätswochen für Theoretische Physik, Schladming (Austria)

Sept. 2014 *Instabilities on graphene's lattice with electron-phonon interactions*
7th International Conference on the Exact Renormalization Group, Lefkada (Greece)

July 2014 *Instabilities on graphene's lattice with electron-phonon interactions*
FOR 723 Workshop, Vienna (Austria)

Mar. 2014 *Interplay between electron-phonon and Coulomb interactions in the honeycomb lattice*
SFU Condensed Matter Seminar, Burnaby (Canada)

Mar. 2014 *Interplay between electron-phonon and Coulomb interactions in the honeycomb lattice*
APS March Meeting, Denver (USA)

July 2013 *Interaction induced charge and spin pumping through a quantum dot at finite bias*
Solid State Physics Seminar, KIT, Karlsruhe (Germany)

June 2013 *Interaction induced charge and spin pumping through a quantum dot at finite bias*
FU Condensed Matter Seminar, Berlin (Germany)

Mar. 2013 *Interaction induced charge and spin pumping through a quantum dot at finite bias*
DPG Spring Meeting, Regensburg (Germany)

Teaching Experience

Oct. 2013 – Oct. 2014 Co-supervision of Master Thesis *Instabilities of interacting electrons in the bilayer square lattice Hubbard model* by Timo Reckling, Heidelberg University

Apr. 2014 – Apr. 2015 Tutor of Graduate Courses, Heidelberg University

Oct. 2010 – Apr. 2014 Tutor of Undergraduate Courses, RWTH Aachen University and Heidelberg University